1.2 Multiplying + Dividing Rational Numbers in Decimal Form

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1.2 – Rational Numbers in Decimal Form...continued!

Name:_____ Block____

Evaluate.

98. $2 \times 5 =$	99. $-2 \times 5 =$	100. $2 \times (-5) =$	101. $-2 \times (-5) =$	102. $2(-7) =$
+10	-10	-10	+10	$(2)(-7)$ $2 \times -7 = -14$

mutiply

What are the RULES for MULTIPLYING & DIVIDING Integers?

Rule	Example
(+) × (+) = (+)	$2 \times 5 = 10$ or $5 \times 2 = 10$
(+) × (−) = (−)	$2 \times (-5) = -10$
(−) × (+) = (−)	$(-2) \times (5) = -10$
(−) × (−) = (+)	$(-2) \times (-5) = +10$
(+) ÷ (+) = (+)	$+10 \div +5 = +2$
(−) ÷ (−) = (+)	$(-10) \div (-5) = +2$
(+) ÷ (−) = (−)	$+10 \div (-5) = (-2)$
(−) ÷ (+) = (−)	$(-10) \div (+5) = (-2)$

Answer

opposite signs → negative answer

opposite signs → Answer will always be negative

In summary.... Same Sign = Positive. Different Sign = Negative.

(+)(+) (−)(−) (+)(−) (−)(+)

PRACTICE

Evaluate.

103. $4 \times 6 =$	104. $-8(3) =$	105. $(-11)(-5) =$	106. $-2 \times 23 =$
24	(-24)	55	(-46)
107. $-55 \div 5 =$	108. $-5 + (5) =$	109. $(44) \div (-4) =$	110. $-20 + 4 =$
(-11)	(-1)	(-11)	(-5)
111. $-9 \times -5 =$	112. $-5(5) =$	113. $(9)(-4) =$	114. $-20 \times 3 =$
45	(-25)	(-36)	(-60)

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NO CALCULATOR ① multiply normally as if there is NO DECIMAL.

Example 6: Multiplying decimals ② count the total number of decimal place, and give the answer that many decimals

1 dp + 1 dp = 2 dp

a) $1.5 \times 1.8 = 2.70$. b) $(-1.2)(0.3) = -.36$. c) $(-4)(-1.02) = 4.08$

move 2 places 2 dp 2 dp.

15 × 18 = 120 + 150 = 270 → = 2.70

12 × 3 = 36 → = −0.36

102 × 4 = 408 → = +4.08

PRACTICE

Estimate and then determine the product. NO calculator

217. $2.34 \times 6.8 =$	218. $62.8 \times 46.2 =$	219. $72.9 \times 66.12 =$	220. $112.04 \times 50.19 =$

234

PRACTICE

Estimate and then determine the product. NO calculator

217. $2.34 \times 6.8 =$ 234 68 1872 14040 15.912 (3 decimals) 15.912	218. $62.8 \times 46.2 =$	219. $72.9 \times 66.12 =$	220. $112.04 \times 50.19 =$
221. $15.3 \times 6.8 =$	222. $-22.7 \times 4.2 =$	223. $-32.9(-26.2) =$	224. $112 \times (-0.29) =$

HW

Example 7: On February 5, 2008, the price of share in CIBC changed by -$1.640. Dan owns 35 shares. By how much did those shares change in value that day?

1 share changed by -1.640

So, 35 shares changed by $35 \times (-1.640)$

$(+) \times (-) = (-)$

3 dp

$$\begin{array}{r} 1640 \\ \times\ 35 \\ \hline 8200 \\ +49200 \\ \hline 57400. \end{array} = 57.400$$

3 dp.

Dan's shares changed by $-\$57.40$

Evaluate.

115. $(1)(1) =$ $+1$	116. $(1)(-1) =$ -1	117. $(-1)(-1) =$ $+1$
118. $(-1)(-1)(-1) =$ $+1(-1) = -1$	119. $(-1)(-1)(-1)(-1) =$ $(+1)(+1) = +1$	120. $(-1)(-1)(-1)(-1)(-1) =$ $-(+1)(+1) = -1$

Answer the following with a yes or a no.

121. If two negative numbers are multiplied together will their product be positive?	Yes (+)
122. If three negative numbers are multiplied together will their product be positive?	No, will be (−) eg. 118
123. If four negative numbers are multiplied together will their product be positive?	Yes (+)
124. If an even number of negative numbers are multiplied together will their product be positive?	Yes (+)
125. If an odd number of negative numbers are multiplied, together will their product be positive?	No, will be (−)

Multiplying MORE THAN 1 Integer...How do + and − signs apply?

PRACTICE

Determine whether each product is positive or negative. evaluate.

134. $(-31)(-14)(-91) =$ Negative ✓ -39494	135. $(-12)(-51)(-19)(-1) =$	136. $-(-101)(-1)(-1)(-199) =$
137. $(-11)(-2)(-12)(2)(-31) =$	138. $(-1)(11)(-1)(51)(-1)(-2) =$	139. $(-5)(-92)(-1)(-19)(-2) =$

Find the product.

140. $2 \times 3 \times 1 =$	141. $-2 \times 5 \times (-1) =$	142. $-4 \times (-3) \times (-1) =$
143. $-1 \times (-2) \times 3 \times (-1) =$	144. $1 \times (-2) \times 5 \times (-1) =$	145. $-1 \times (-1) \times (-1) \times (-4) =$

HW practice Q's p. 8 + 9

p. 8 + 9

143. $-1 \times (-2) \times 3 \times (-1) =$	144. $1 \times (-2) \times 5 \times (-1) =$	145. $-1 \times (-1) \times (-1) \times (-4) =$
146. $(-1)(-2)(-1)(2)(-1)(-2) =$	147. $(-1)(1)(-1)(5)(-1)(-2) =$	148. $(-5)(-2)(-1)(-1)(-2) =$

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* Review: (+) ÷ (+) = (+) (-) ÷ (-) = (+) (-) ÷ (+) = (-) (+) ÷ (-) = (-) *

Warm Up: Dividing Integers

a) $8 \div (-2) = -4$ (+) (-) (-)

b) $(-12) \div (-3) = +4$ (-) (-) (+)

always move the decimal the same number of place

ignore (-) ... add back at end.

Example 8: Dividing Integers ***with Decimals.***

a) $(-1.38) \div 0.6$ = (-) = -2.3

$6\overline{)13.8}$ → $6\overline{)1380}$ → 23, −12, 18, −18, 0

move the decimal 1 place value

b) $(-2.56) \div (-0.4)$ = (-) (-) (+) = 6.4

1 place

$4\overline{)25.6}$ → $4\overline{)256}$ → 06.4, −24, 16, −16, 0

064.

Estimate and then evaluate each quotient. Round your answer to 1 decimal place.

225. $234 \div 6 =$	226. $1204 \div 5 =$	227. $24 \div 7 =$	228. $-534 \div 8 =$
$6\overline{)234}$			

HW Questions.

Example 9: Determine the missing number in each division statement.

a) $[\_] \div (-2.6) = 9.62$ cancels $\times(-2.6)$ $\times(-2.6)$

$\Rightarrow [\_] = 9.62 \times (-2.6)$ (+) (-)

? = −25.012

division, to solve we do the "opposite" = multiply

3 dp.

962 × 26 → 5772, 19240 → 25012

Homework

Complete all *"practice"* questions in this booklet

Section 1.2 pg 18-19

Questions #1-11, *12, *15

(some of these questions you may have all ready done-yesterday's homework was:

#1,2,5,7,8ab,10,*12) (last lesson)

#3, 4, 6, 8cd, 9, 11, 15 *New*)

QUIZ TOMORROW!

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